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Pending Claims:

3. An isolated DNA sequence comprising a nucleic acid sequence encoding a plant violaxanthin de-epoxidase protein joined to a heterologous promoter sequence, wherein said violaxanthin de-epoxidase protein has a molecular weight of approximately 43 kilodaltons.

F 4. A method of producing a plant or bacterial host cell with a modified level of violaxanthin de-epoxidase comprising growing a plant or bacterial host cell having a construct comprising, in the order of transcription, the DNA sequence of Claim 3, and a transcriptional termination region, wherein said promoter sequence comprises a plant transcription initiation region.

5. The method of Claim 4 wherein said construct further comprises a translation initiation region and a plastid translocation sequence.

F 2 9. A method of producing a plant with a modified level of zeaxanthin comprising growing a plant having a construct comprising, in the order of transcription, the DNA sequence of Claim 3 and a transcriptional termination region, wherein said promoter sequence comprises a plant transcription initiation region.

10. A plant, plant cell or other plant part comprising the DNA sequence of Claim 3.

F 3 11. A plant or bacterial cell produced by the method of any one of Claims 4 and 5.

16. A plant produced by the method of claim 9.

F 4 17. An isolated polynucleotide sequence comprising a sequence selected from the group consisting of nucleotides 235 to 1653 of SEQ ID NO: 1; nucleotides 611 to 1653 of SEQ ID NO: 1; and nucleotides 235 to 610 of SEQ ID NO: 1.

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18. An isolated polynucleotide sequence comprising a sequence selected from the group consisting of nucleotides 42 to 1475 of SEQ ID NO: 3; nucleotides 445 to 1475 of SEQ ID NO: 3; and nucleotides 42 to 444 of SEQ ID NO: 3.
19. An isolated polynucleotide sequence comprising a sequence selected from the group consisting of nucleotides 45 to 1430 of SEQ ID NO: 5; nucleotides 385 to 1430 of SEQ ID NO: 5; and nucleotides 45 to 384 of SEQ ID NO: 5.
20. An isolated polynucleotide sequence comprising a sequence selected from the group consisting of a sequence encoding SEQ ID NO:2; a sequence encoding amino acids 1 to 125 of SEQ ID NO:2; and a sequence encoding amino acids 126 to 473 of SEQ ID NO:2.
21. An isolated polynucleotide sequence comprising a sequence selected from the group consisting of a sequence encoding SEQ ID NO:4; a sequence encoding amino acids 1 to 134 of SEQ ID NO:4; and a sequence encoding amino acids 135 to 478 of SEQ ID NO:4.
22. An isolated polynucleotide sequence comprising a sequence selected from the group consisting of a sequence encoding SEQ ID NO:6; a sequence encoding amino acids 1 to 113 of SEQ ID NO:6; and a sequence encoding amino acids 114 to 462 of SEQ ID NO:6.

REMARKS

Claims 3 – 5 and 9 - 11 are pending in the application. Claims 3, 4, 9 and 11 have been amended. New claims 16 - 22 have been presented.